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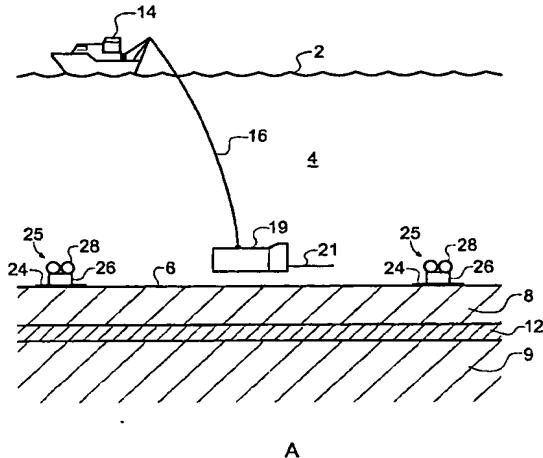
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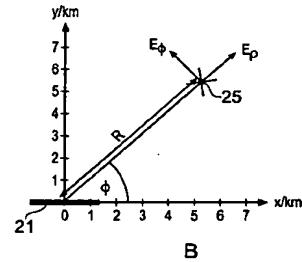
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(54) Title: ELECTROMAGNETIC SURVEYING FOR HYDROCARBON RESERVOIRS



A



B

(57) **Abstract:** An electromagnetic survey method for surveying an area that potentially contains a subterranean hydrocarbon reservoir. The method comprises detecting a detector signal in response to a source electromagnetic signal, resolving the detector signal along at least two orthogonal directions, and comparing phase measurements of the detector signal resolved along these directions to look for a phase separation anomaly indicative of the presence of a buried hydrocarbon layer. The invention also relates to planning a survey using this method, and to analysis of survey data taken using this survey method. The first and second data sets may be obtained concurrently with a single horizontal electric dipole source antenna. The method is also largely independent of a source-detector pair's relative orientation and so provides for good spatial coverage and easy-to-perform surveying.

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